ABSTRACT

THE EFFECT OF GLYCERIN ON THE SURFACE HARDNESS AND ROUGHNESS OF NANOFILL COMPOSITE.

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ABSTRACT
Background: Present research studied the surface hardness and roughness dependence on polymerization. Polymerization of composites occurs through chain reaction that is induced by free radicals. Oxygen in the air decreases the excitability of the photo initiator, causing polymerization interference. Oxygen inhibition layer (OIL) is formed on the surface. OIL can be reduced by curing the composite through by application of glycerin to the surface. **Objective:** To determine the effect of glycerin on the surface hardness and roughness of nanofill composite. **Material and Methods**: 64 specimens of composite (Z350 XT, 3M) were prepared using a disc-shaped acrylic. The groups were divided into group A surface roughness (N=32) and group B surface hardness (N=32). Group A1, the specimen was coated with glycerin and light cured for 20 s and group A2, the specimen was exposed to air and light cured for 20 s. Group B1 was coated with glycerin and light cured for 20 s and Group B2 was exposed to air and light cured for 20 s. The specimens were stored in distilled water for 24 h at 37^0. Measuring with Surface roughness tester and Vickers. Data were statistically analyzed using Mean-whitney U Test. **Results:** There were statiscally significant difference between the surface roughness of nanofill composite coated with glycerin and without glycerin ($p<0,05$) and also that there were statiscally significant difference in the surface roughness of nanofill composite coated with glycerin and without glycerin ($p<0,05$). **Conclusion:** The surface roughness of nanofill composite resin coated with glycerin is lower than composite without glycerin and the surface hardness of nanofill composite resin coated with glycerin is higher than composite without glycerin

Keywords*: Glycerin, surface roughness, surface hardness, nanofill composite, oxygen inhibiting layer*